



PHOTOS BY JERRY VOLESKY, UNIVERSITY OF NEBRASKA

## Windrowed and rake-bunched hay extend winter feed.

by Heather Smith Thomas

**F**inding ways to keep cattle grazing longer in the fall and winter can reduce costs and keep cattle healthier, says Timothy DelCurto, Nancy Cameron Chair of Animal and Range Sciences at Montana State University. Some of these options include windrow grazing and rake-bunched hay.

While he was at Oregon State University's (OSU) Eastern Oregon Agriculture Center, the university's two range livestock research stations did studies on rake-bunched forage for fall and winter grazing. Hay was cut and raked into small piles containing 80-120 pounds (lb.) of forage.

"The difference between rake-bunching and windrow-grazing is that piles work better in areas where there's more snow," he explains. "It can be difficult for cows to find windrows when snow is deep."

Researchers used a bunch-rake to create piles a little smaller than those made by the buck-rakes used to gather loose hay for stacking,

DelCurto explains. "All you need is something that will scoop up hay to leave in a pile.

"We just went down the windrows and pushed the hay into piles, which is very quick and simple," he continues. "The piles are like a little haystack, and the hay keeps very well — comparable with baled hay. There is very little loss of nutrients."

In areas that get snow, cows can find the piles more easily than they can find windrows. The piles keep better than windrows in environments that get significant amounts of fall and winter precipitation. There's less spoilage because of less surface area exposed to the weather and less ground-surface contact.

Whether a person can utilize rake-bunched hay or windrows will depend on the amount of precipitation and wind.

DelCurto spent more than 25 years at OSU, working at both the Burns and Union stations.

Rake-bunching works well at the Burns station, but not as well

under the windier environment of the Union station. There, windrows and piles are vulnerable to being scattered by high wind.

"The Burns research station is about 4,000 feet elevation and has colder ambient temperature and a drier environment than at Union, and less annual precipitation," he describes. "The Union research station is about 5° to 10° warmer in winter, but has stronger wind. In that location we found rake-bunching doesn't work because wind is more apt to blow the hay piles away.

"Since it is a little warmer and wetter, we also had more problems with hay molding and not keeping as well," he continues.

DelCurto says he prefers rake-bunched hay as an alternative to windrow-grazing in many places, particularly in regions that have significant winter snow. Windrow-grazing, or even grazing round bales in the pasture, is more popular in a climate that gets most of its precipitation April through October, then has relatively dry winters.

He references a study on

**"The difference between rake-bunching and windrow-grazing is that piles work better in areas where there's more snow. It can be difficult for cows to find windrows when snow is deep." — Timothy DelCurto**

windrow-grazing done at the University of Nebraska Gudmundsen Sandhills Laboratory. In that study, weaned steer calves gained the same or better grazing windrows than similar calves fed baled hay in confinement, which had a 37% higher feed cost.

“Ranchers can save money doing windrow-grazing or rake-bunch grazing,” DelCurto says.

“When we summarized 10 years of rake-bunch grazing at the Eastern Oregon Ag Research Center, the cows did fine up to about 2 feet of snow. We had one year out of 10 where the snow was much deeper and crusted, which forced us to provide supplemental feed because the cows were having a hard time accessing the piles,” he says.

### Strip-graze either way

Whether grazing windrows or bunches, it helps to strip-graze using electric fence.

“This reduces waste and isn’t very labor-intensive compared with feeding hay to cows,” DelCurto says. “Moving the electric fence about once a week seemed adequate. You just open a new area — perhaps two or three rows of bunches, or two or three windrows — depending on size of the field and number of cattle. Once they clean that up, you let

---

## The advantage of cutting and leaving forage in windrows rather than letting cattle harvest it on the stem as stockpiled feed is that you can cut it at the optimum stage of maturity, locking in the nutrients at their highest quality.

---

them into a new section, but allow them continued use of the grazed portion. They can go back and clean up anything they missed.”

In almost all cases, grazing rake-bunched or windrowed hay offered savings.

“Many producers feed cattle with flatbed pickups to haul hay out. When you get deep snow or muddy conditions, it can be tough to drive out there — hard on equipment and people,” says DelCurto.

Heavy snow means plowing feed trails, chaining up the feed equipment, and plugging in trucks and tractors so they’ll start.

“It’s nice if the cows can feed themselves. If you only have to move electric fence every five to seven days, it’s not a big chore. You can pick a day and time of day when it’s not below zero or during a blizzard,” he says.

### Make a backup plan

“The only caution for people

with these feeding strategies is that you need a back-up plan, because it does increase risk. There might be an occasional year that you’d still need to go out and feed hay — if the cows can’t access buried windrows, rake-bunches or stockpiled pastures,” DelCurto says.

### Healthier environment

Some people keep cattle confined for winter feeding because it’s easier to get the feed to the cattle. Studies have shown that cattle stay healthier, however, out in a more extensive environment. They stay cleaner and are not exposed to as many pathogens, get more exercise, and generally do better.

For weaned calves or heifer development, this is a much healthier way to winter them than in a feedlot. Replacement heifers wintered on pasture without pampering and concentrate feeds are healthier, hardier and have

better longevity than feedlot-developed heifers, says DelCurto. Pregnant cows are healthier because they are exposed to fewer pathogens when wintered in an extensive environment rather than confined.

“When profit margins are tight, alternative strategies with less cost for harvest and feeding make a big difference and can save money,” DelCurto says. “When you look at the price of a new tractor, baler or feed truck to haul hay to cattle, and maintenance/repair/fuel, it becomes more attractive to let cattle do part of the harvesting and feeding.”

### Windrowed hay

University of Nebraska studies have shown windrow grazing to save feeding costs and enable cows to more efficiently graze fall and winter pastures. Jerry Volesky, range and forage specialist at the University of Nebraska–Lincoln West Central Research and Extension Center, says this practice has become fairly popular in his area and a few more people are trying it.

“Where it seems to work best is with annual forage crops, which include things like sudangrass, sorghum-sudangrass hybrids, millets, and various cocktail mixes that include some warm-season species in the mix,” he says.

These are crops that have a lot of growth and can be cut at the peak of their forage quality.

The advantage of cutting and leaving forage in windrows rather than letting cattle harvest it on the stem as stockpiled feed is that you can cut it at the optimum stage of maturity, locking in the nutrients at their highest quality. If left on the stem, the plants become overly mature and dry.

“Stage of maturity is important when harvesting hay or creating windrows for winter grazing. When you cut it, you capture the quality at that stage,” says Volesky.

The annual crops are usually planted in early- to mid-July for an adequate period of growth. The



“When profit margins are tight, alternative strategies with less cost for harvest and feeding make a big difference and can save money,” DelCurto says. “When you look at the price of a new tractor, baler or feed truck to haul hay to cattle, and maintenance/repair/fuel, it becomes more attractive to let cattle do part of the harvesting and feeding.”

*Continued on page 64*

windrows can be made in September and grazed all winter. He did a study about 15 years ago, and compared leaving a crop in windrows vs. baling it to haul to a stack yard and then hauling it back to feed cows in winter.

“We grazed those windrows during November through February with weaned calves, weighing about 500 pounds at the start. We looked at how well the forage quality maintained through winter, and found it kept just as well as the hay that was harvested in big round bales. Calf weight gain on windrow grazing was equal to that of the calves that were fed hay. Windrow grazing was a cheaper alternative because we saved the cost of baling, hauling the bales and hauling them back,” he explains.

“Another advantage is that you leave the nutrients in the field rather than hauling them off,” he explains.

Any organic matter left, plus

manure from the cattle, serves as good fertilizer for the next few years.

“We strip-grazed the field, giving calves about a week’s allocation at a time, using electric fencing. Otherwise they tend to pick through windrows over the entire field, bedding in the hay, wasting more. The waste with strip-grazing was about 25% of the forage. We didn’t try to push them to clean up the feed. After the study ended in February, we brought in some dry cows and they ate more of it, so there wasn’t much waste. After the second go-round with cows, waste was probably equivalent to what

you’d have feeding big round bales out on the field,” says Volesky.

“Forage quality is maintained through most of the winter, but by March or April there is more variability in weather — with warming and cooling, and maybe some rain instead of snow. Here in the central Plains that time of year, likelihood of heavy, wet snow might be a problem, with some deteriorating changes in the windrows,” he says.

Large windrows keep better than small ones.

“It depends partly on the type of forage and the equipment you use. If it’s a sudangrass or sudangrass mix, producing 3 to 4 tons to the acre, those will be fairly large windrows. You need a properly formed windrow that settles down,” he says.

If it’s too large and fluffy, a strong wind may scatter it all over the field.

A fairly large windrow, though it settles a bit, is easy for cattle to find under deep snow.

“Once the cattle learn about windrow-grazing, they root down through the snow and find the forage,” says Volesky.

It helps to cut it at a higher stubble height than when cutting hay, so windrows are not lying directly on the ground. On a perennial pasture or hay field, there is minimal damage to plants

under the windrow, since the plants are cut after most of their growth cycle is completed.

“The feed lies in the windrow for several months, and there is some potential for mold, but we noticed that once the hay is cured and dry, it didn’t spoil much — other than some discoloring of the top surface from rain or snow through the fall. Underneath, we didn’t have any mold or spoilage problems. This will depend partly on the amount of rain you get in the fall. Here in Nebraska, or the Dakotas, Montana, Wyoming, etc., our fall weather is usually relatively dry,” he says.

In many cases producers are grazing dry cows on windrows rather than calves, and just letting cows into the whole field rather than strip-grazing with electric fencing.

“Initially we recommended strip-grazing to minimize waste, but many folks today just graze it — depending on size of the field and number of cattle, and see good results without the extra labor of moving electric fence.”

A person may trade labor saved with a bit more waste, but feel they come out ahead in the long run. “Waste” provides litter for future soil fertility. |



A benefit to bunch-grazing or windrow-grazing is that you leave the nutrients in the field rather than hauling them off.

PHOTO COURTESY TIMOTHY DELCORTO

Editor’s note: Heather Smith Thomas is a freelance writer and cattlegirl from Salmon, Idaho.